

CLAIMS

What is claimed is:

1. An absorbent article comprising:

a main body having a first main body waist portion, a second main body waist
5 portion and a central main body portion disposed between the first and
second main body waist portions, the main body having orthogonal
longitudinal and lateral axes; and

a pair of elastic side panels each connecting the first main body waist portion to
the second main body waist portion, the main body and the side panels
10 collectively defining a waist opening edge surrounding a waist opening and
two leg opening edges, each leg opening edge surrounding a leg opening,
each elastic side panel having a first side portion extending laterally outward
from the first main body waist portion and terminating in a first outer lateral
side panel edge, and a second side portion extending laterally outward from
15 the second main body waist portion and terminating in a second outer lateral
side panel edge, the first side portion being attached to the second side
portion by a side seam, at least a portion of the side seam being curved when
the first and second side portions are in a stretched condition.

2. An absorbent article according to claim 1 wherein the absorbent article comprises a
20 backsheet and wherein the main body includes a first portion of the backsheet, a
topsheet attached to the first portion of the backsheet and an absorbent core disposed
intermediate the topsheet and the first portion of the backsheet, the elastic side panels
being formed at least in part from a second portion of the backsheet.

3. An absorbent article according to claim 1 wherein the elastic side panels are formed
25 as separate members each attached to the main body along at least a portion of a main
body lateral edge.

4. An absorbent article according to claim 1 wherein the entire side seam is curved when the first and second side portions are in a stretched condition.
5. An absorbent article according to claim 1 wherein the at least a portion of the side seam is formed as a circular arc.
- 5 6. An absorbent article according to claim 1 wherein the at least a portion of the side seam comprises a plurality of curved sub-portions.
7. An absorbent article according to claim 6 wherein at least two of the plurality of curved sub-portions are formed with different geometric curve types.
8. An absorbent article according to claim 1 wherein a first portion of the side seam is curved and a second portion of the side seam is substantially straight when the first and second side portions are in a stretched condition.
9. An absorbent article according to claim 8 wherein the first portion of the side seam has a centerline that intersects the waist opening edge at a first intersection point, a tangent to the centerline defining a first seam angle with respect to the vertical axis.
10. An absorbent article according to claim 9 wherein the first seam angle is in a range from about 0 to about 80 degrees.
11. An absorbent article according to claim 9 wherein the first seam angle is in a range from about 10 degrees to about 50 degrees.
12. An absorbent article according to claim 9 wherein the first side seam angle is in a range from about 25 degrees to about 35 degrees.
13. An absorbent article according to claim 9 wherein the second portion of the side seam has a centerline that intersects one of the leg opening edges at a second intersection point, the centerline defining a second seam angle with respect to the vertical axis.

14. An absorbent article according to claim 13 wherein the second seam angle is in a range from about 0 to about 80 degrees.
15. An absorbent article according to claim 13 wherein the second seam angle is in a range from about 10 degrees to about 50 degrees.
- 5 16. An absorbent article according to claim 13 wherein the second side seam angle is in a range from about 25 degrees to about 35 degrees.
17. An absorbent article according to claim 8 wherein the first portion of the side seam has a centerline that intersects one of the leg opening edges at a first intersection point, a tangent to the centerline defining a first seam angle with respect to the vertical axis.
- 10 18. An absorbent article according to claim 17 wherein the first seam angle is in a range from about 0 to about 80 degrees.
- 15 19. An absorbent article according to claim 17 wherein the first seam angle is in a range from about 10 degrees to about 50 degrees.
- 20 20. An absorbent article according to claim 17 wherein the first side seam angle is in a range from about 25 degrees to about 35 degrees.
21. An absorbent article according to claim 17 wherein the second portion of the side seam has a centerline that intersects one of the leg opening edges at a second intersection point, the centerline defining a second seam angle with respect to the vertical axis.
22. An absorbent article according to claim 21 wherein the second seam angle is in a range from about 0 to about 80 degrees.
23. An absorbent article according to claim 21 wherein the second seam angle is in a range from about 10 degrees to about 50 degrees.

24. An absorbent article according to claim 21 wherein the second side seam angle is in a range from about 25 degrees to about 35 degrees.

25. An absorbent article according to claim 8 wherein the first portion of the side seam includes a first curved sub-portion having a first centerline that intersects the waist opening and a second curved sub-portion having a second centerline that intersects one of the leg openings, a first tangent to the first centerline defining a first seam angle with respect to the vertical axis and a second tangent to the second centerline defining a second seam angle with respect to the vertical axis.

26. An absorbent article according to claim 1 wherein the first side portion includes a lower hip region having a lateral hip region edge, the lateral hip region edge intersecting the first outer lateral side panel edge.

27. An absorbent article according to claim 26 wherein at least a portion of the first outer lateral side panel edge and at least a portion of the lateral hip region edge form a substantially continuous curve.

28. An absorbent article comprising:

a main body having a first main body waist portion, a second main body waist portion and a central main body portion disposed between the first and second main body waist portions, the main body having orthogonal vertical and lateral axes;

a pair of side panels, each side panel connecting the first main body waist portion to the second main body waist portion, the main body and the side panels collectively defining a waist opening edge and two leg opening edges, each side panel being formed from a first side portion extending laterally outward from the first main body waist portion and a second side portion extending laterally outward from the second main body waist portion; and
a pair of side seams, each side seam connecting the first side portion of one of the side panels to the second side portion of the same side panel, each side seam

intersecting the waist opening edge at a first seam angle relative to the vertical axis and intersecting one of the leg opening edges at a second seam angle relative to the vertical axis when the first and second side portions of the associated side panel are in a fully stretched condition, at least a portion of each side seam being curved when the first and second side portions of the associated side panel are in a stretched condition.

29. An absorbent article according to claim 28 wherein at least one of the first and second side seam angles is in a range from about 10 degrees to about 80 degrees.

30. An absorbent article according to claim 28 wherein at least one of the first and second side seam angles is in a range from about 10 degrees to about 50 degrees.

31. An absorbent article according to claim 28 wherein at least one of the first and second side seam angles is in a range from about 25 degrees to about 35 degrees.

32. An absorbent article according to claim 28 wherein at least a portion of each side seam adjacent the waist opening edge is curved when the first and second side portions of the associated side panel are in a fully stretched condition.

33. An absorbent article according to claim 32 wherein at least a portion of each side seam adjacent the leg opening edge intersected by the side seam is substantially straight when the first and second side portions of the associated side panel are in a fully stretched condition.

34. An absorbent article according to claim 28 wherein at least a portion of the side seam adjacent the leg opening edge intersected by the side seam is curved when the first and second side portions of the associated side panel are in a fully stretched condition.

35. An absorbent article according to claim 34 wherein at least a portion of the side seam adjacent the waist opening edge is substantially straight when the first and second side portions of the associated side panel are in a fully stretched condition.

36. A method of forming an absorbent article comprising:

5 providing a backsheet having orthogonal longitudinal and lateral axes;
disposing an absorbent core on the backsheet;
attaching a topsheet to the backsheet with the absorbent core disposed
intermediate the topsheet and the backsheet, the backsheet, the absorbent
core and the topsheet collectively forming a main body having a first lateral
10 edge and an opposing second lateral edge and having a first main body
waist portion, a second main body waist portion and a central main body
portion disposed between the first and second main body waist portions;
providing first and second side panels, each having a first side portion with a
first body-facing surface, a first outward-facing surface and a first outer
15 lateral side panel edge and having a second side portion with a second body
facing surface, a second outward facing surface and a second outer lateral
side panel edge;
attaching the first side panel to the main body along the first lateral edge so that
the first side portion of the first side panel extends laterally outward from the
first main body waist portion and the second side portion of the first side
20 panel extends laterally outward from the second main body waist portion;
attaching the second side panel to the main body along the second lateral edge so
that the first side portion of the second side panel extends laterally outward
from the first main body waist portion and the second side portion of the
25 second side panel extends laterally outward from the second main body
waist portion;
folding the main body so that the first body-facing surface of the first side panel
engages the second body facing surface of the first panel and the first body-

facing surface of the second side panel engages the second body facing surface of the second panel;

forming a first side seam adjacent the first and second outer lateral edges of the first side panel to hold the first body facing surface of the first panel in permanent contact with the second body facing surface of the first panel, the first side seam being formed with the first side panel in a fully stretched condition and with at least a portion of the first side seam being curved; and forming a second side seam adjacent the first and second outer lateral edges of the second side panel to hold the first body facing surface of the second panel in permanent contact with the second body facing surface of the second panel, the second side seam being formed with the second side panel in a stretched condition and with at least a portion of the second side seam being curved.

37. A method of forming an absorbent article comprising:

providing a generally planar backsheet having orthogonal longitudinal and lateral axes, a main backsheet portion and a first backsheet side portion extending laterally outward from a first lateral side of the main backsheet portion and a second backsheet side portion extending from a second lateral side of the main backsheet portion, the first lateral side being generally opposite the second lateral side;

disposing an absorbent core on the main backsheet portion;

attaching a topsheet to the backsheet with the absorbent core disposed intermediate the topsheet and the main backsheet portion, the main backsheet portion, the absorbent core and the topsheet collectively forming a main body having a first lateral edge and an opposing second lateral edge;

forming first and second side panels, the first side panel being formed at least in part from the first backsheet side portion and extending laterally outward from the first lateral edge and the second side panel being formed at least in

part from the second backsheet side portion and extending laterally outward from the second lateral edge, each of the first and second side panels having a first side portion with a first body-facing surface, a first outward-facing surface and a first outer lateral side panel edge and having a second side portion with a second body facing surface, a second outward facing surface and a second outer lateral side panel edge;

folding the main body so that the first body-facing surface of the first side panel engages the second body facing surface of the first panel and the first body-facing surface of the second side panel engages the second body facing surface of the second panel;

forming a first side seam adjacent the first and second outer lateral edges of the first side panel to hold the first body facing surface of the first panel in permanent contact with the second body facing surface of the first panel, the first side seam being formed with the first side panel in a fully stretched condition and with at least a portion of the first side seam being curved; and forming a second side seam adjacent the first and second outer lateral edges of the second side panel to hold the first body facing surface of the second panel in permanent contact with the second body facing surface of the second panel, the second side seam being formed with the second side panel in a fully stretched condition and with at least a portion of the second side seam being curved.